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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Dae-Young Jang

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EXAMINER

PAUL, DISLER

ART UNIT

PAPER NUMBER

2615

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/692,769	Applicant(s) JANG ET AL.	
	Examiner DISLER PAUL	Art Unit 2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3-6,8,9 and 11-20 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 3-6,8 and 16-20 is/are allowed.
- 6) ☒ Claim(s) 9 and 13-15 is/are rejected.
- 7) ☐ Claim(s) 11-12 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

Response to Arguments

1. The Applicant's arguments are moot in view of the examiner's new ground(s) of rejection of the claim 9 is made in view of Pachet et al. (US 2001/0055398 A1).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 9, 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pachet et al. (US 2001/0055398 A1).

Re claim 9, Pachet et al. disclose of the object-based three-dimensional audio terminal system comprising: an audio decoding unit demultiplexing and decoding a multiplexed audio signal including plurality of sound signals and audio scene information applied through a medium wherein the audio decoding unit comprises a demultiplexer for demultiplexing data applied through the medium and multiplexed to separate them into different sound signals and audio scene information and a decoder for decoding the sound signals and audio scene information separated by the demultiplexer (fig.2, 12,11; par [0072-0073, 0162, 0139]/different audio tracks are decoded and separated accordingly and thus read on decoding and demultiplexing; the plurality of different

sound signals present in the audio tracks and scene of listener with different sounds based on constraints).

While, Pachet et al. disclose of having plurality of different sound signals and scene information. But, Pachet et al. fail to disclose of the specific wherein such signals being background sound data, and sound source data. But, official notice is taken the concept of having such sounds being of the specific of background sound data, and sound source data is well known in the art, thus it would have been obvious for one of the ordinary skill in the art to have modify Pachet et al. with the sounds sources being background sound data, and sound source data for purpose of generating desired/enhanced sound effect to reflect positional information of the sound emitting object.

Pachet et al. further disclose of having an audio scene-synthesizing unit selectively synthesizing the object sounds with the audio scene information decoded by the audio decoding unit into a 3-D audio scene under the control of a user; a user control unit providing a user interface so as to selectively synthesize the audio scene by the audio scene synthesizing unit under the control of the user (fig.12; par [0076-0077]0136-0139]/creating 3-D with sound decod/demultiplex and spatialized by the user at scene); and an audio reproducing unit reproducing the 3-D audio scene synthesized by the audio scene-synthesizing unit (fig.12 wt (104/speakers).

15. The system according to claim 9, wherein the user control unit includes an interface that controls each sound source object and the listener's direction and position, and receives the user's control for maintaining realism of sound reproduction in a virtual space to transmit a control signal to each unit (par[0138-0139, 0128]/in virtual space where listener and sound adjust by user).

4. Claims 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pachet et al. (US 2001/0055398 A1) and Kitamura (US 6,704,421 B1).

Re claim 13, the system according to claim 9 with audio output synthesizing, But, Pachet et al. fail to disclose of the wherein the audio reproducing unit includes: an acoustic environment equalizer equalizing the acoustic environment between a listener and a reproduction system in order to accurately reproduce the 3-D audio transmitted from the audio scene and an acoustic environment corrector calculating a coefficient of a filter for the acoustic environment equalizer's equalization, and correcting the equalizer by the user. But, Kitamura disclose of a system wherein similar concept of the audio reproducing unit includes: an acoustic environment equalizer equalizing the acoustic environment between a listener and a reproduction system in order to accurately reproduce the 3-D audio transmitted from the audio scene and an acoustic environment corrector calculating a coefficient of a filter for the acoustic environment equalizer's equalization, and correcting the equalizer by the user (fig.1-2 (34,16); col.4

line 1-12 & line 35-60; col.6 line 5-17/user wt equalizer and corresponding filter for adjustment) for purpose of enabling the user to fashion an equalizer for each of the multichannels signal. Thus, taking the combined teaching of Pachet et al. and Kitamura as a whole, it would have been obvious for one of the ordinary skill in the art to have modify Pachet et al. with the an acoustic environment equalizer equalizing the acoustic environment between a listener and a reproduction system in order to accurately reproduce the 3-D audio transmitted from the audio scene and an acoustic environment corrector calculating a coefficient of a filter for the acoustic environment equalizer's equalization, and correcting the equalizer by the user for purpose of enabling the user to fashion an equalizer for each of the multichannels signal.

The combined teaching of Pachet et al. and Kitamura as a whole, disclose of the audio signal output device outputting a 3-D audio signal equalized by the acoustic environment equalizer (fig.12).

14. The system according to claim 9, wherein the acoustic environment equalizer further includes: means for equalizing the environmental characteristics between the listener and the audio terminal system in order to accurately reproduce 3-D audio; means for correcting the characteristics of the acoustic environment automatically or in response to the user's input, according to the information on speakers of the audio system, a

listening room's construction, and arrangement of the speakers, transmitted from the acoustic environment corrector (see claim 13 rejection).

But, the combined teaching of Pachet et al. and Kitamura as a whole, fail to disclose of the means for canceling crosstalk transmitted to right and left ears of the listener. But, official notice is taken the concept of canceling crosstalk transmitted to right and left ears of the listener is well known in the art, thus it would have been obvious for one of the ordinary skill in the art to have modify the combined teaching of Pachet et al. and Kitamura as a whole, with the similar concept of canceling crosstalk transmitted to right and left ears of the listener for purpose of improving the spatial cues in the binaural signal and the listening experience of the user.

Allowable Subject Matter

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5. Claims 11-12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. Claims 3-6; 8, 16-20 are allowed.

Re claim 19, None of the prior art of record discloses of the specific wherein the an audio encoding unit encoding 3-D information of the audio objects and object signals converted by the audio editing/producing unit to transmit them through a medium; an audio decoding unit receiving the audio signal including object sounds and 3-D information encoded by the audio encoding unit through the medium, and decoding the audio signal; an audio scene synthesizing unit selectively synthesizing the object sounds with 3-D information decoded by the audio decoding unit into a 3-D audio scene under the control of a user; a user control unit outputting a control signal according to the user's selection so as to selectively synthesize the audio scene by the audio scene synthesizing unit under the control of the user; and an audio reproducing unit reproducing the audio scene synthesized by the audio scene synthesizing unit.

Re claim 16, None of the prior art of record disclose of the performing motion processing, 3-D sound localization, and 3-D information to modify and apply the processed object sounds and 3-D information according to a user selection, and mixing them with the background sound and equalizing the mixed audio signal in response to correction of characteristics of the acoustic environment that the user control, and outputting the equalized signal.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Disler Paul whose telephone number is 571-270-1187. The examiner can normally be reached on 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chin Vivian can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/D. P./
Examiner, Art Unit 2615

/Vivian Chin/
Supervisory Patent Examiner, Art Unit 2615